ATTIX 961-01

ATTIX 965-21 SD XC

Nilfisk
ALTO
Why Compromise

Repair manual.

Wap
KEW
TECHNOLOGIES

Nilfisk
ALTO

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Preface

In this manual you will find the essentials you need to know when repairing wet and dry cleaners of the Attix 9 series.

When carrying out repairs, make sure you have a suitable workbench or the like with the necessary power supply available.

If you determine an error in operation, be sure to refer the customer to the user manual.

A fault in the equipment can have a number of causes. Chapter E Troubleshooting will help you here.
Use the illustrated spare parts lists for your repairs. These show you the location of the individual parts and the sequence in which they are assembled.
Read the technical information sheets. These will tell you about any technical modifications made after publication of this repair manual.

Technical information sheets are a supplement to the spare parts list until a follow-on publication.

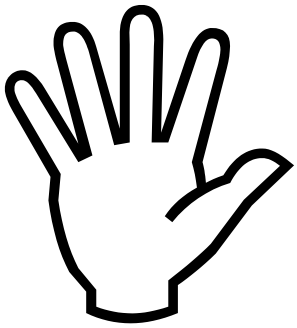
Repair manuals and technical information sheets should be available at the site where repairs are carried out. Further repair manuals of the Attix series may be necessary for repairs to the equipment.

It is not permitted to give them to third parties.

Use original Nilfisk ALTO spare parts only!

Symbols used to mark instructions

Safety instructions marked with this symbol in this manual must be observed to prevent danger to persons.



This symbol is used to mark safety instructions that must be observed to prevent damage to the equipment and degradation of performance.

This symbol indicates tips and instructions to simplify work and to ensure safe operation

Safety Issues.

For your own safety.

Repairs should only be made by someone who has received proper instructions for the job or who is a qualified electrician.

Observe national safety directives and regulations for the electrical engineering trade, in particular:

IEC 60335-2-69
EN 60335-2-69

DIN VDE 105 part 1: operation of electrical power installations.

DIN VDE 0701/0702: repair, modification and testing of electrical installations.

Before starting the equipment, be sure to read the accompanying service manual, and keep it close as ready reference.

The equipment should only be used by persons who have been instructed in its use and are authorized to do so.

ESD (electrostatic discharge)

Observe the following ESD precautions before any repair of or near electronic parts:

- Touch the protective conductor to discharge your own body.
- Possibly wear an anti-static wrist strap.
- Use a conducting floor or tabletop.
- Never touch a circuit board or electronic components, always hold them by the plastic or insulation.
- Transport electronic parts in conductive packaging (e.g. special ESD packages).

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Technical Data.

B

Attix		Attix 961-01	SD
National Variants		EU	EU
Voltage	V	230	230
Frequency	Hz	50/60	
Fusing	A	16	
Power consumption PIEC	W	2x1200	
Connected load for appliance socket	W		1280
Total connected load	W	2400	3680
Power cord lenght	m	10	
Power cord type		H07RN-F3G1,5	
Protection class		I	
Protection category		IPX4	
RFI suppression		EN 55014-1	
Width	mm	580	615
Depth	mm	600	690
Hight	mm	970	990
Weight	kg	30	45
Tank volume	l	70	50
Air volume flow (max)	l/min	2x3600	
Static wate lift (max)	Pa	???	
Sound pressure level at 1m, EN 60704-1		67	
Noise level in working distance	dB(A)	??	

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Technical Data.

B

Attix		ATTIX 965-21 SD XC
National Variants		DK
Voltage	V	230
Frequency	Hz	50/60
Fusing	A	13
Power consumption PIEC	W	2x1000
Connected load for appliance socket	W	990
Total connected load	W	2990
Power cord lenght	m	10
Power cord type		H07RN-F3G1,0
Protection class		I
Protection category		IPX4
RFI suppression		EN 55014-1
Width	mm	615
Depth	mm	690
Hight	mm	990
Weight	kg	45
Tank volume	l	50
Air volume flow (max)	l/min	2x2900
Static wate lift (max)	mbar	230
Sound pressure level at 1m, EN 60704-1		
Noise level in working distance	dB(A)	67

Nilfisk ALTO

Technical Data.

B

Attix		ATTIX 965-21 SD XC
National Variants		EU
Voltage	V	230
Frequency	Hz	50/60
Fusing	A	16
Power consumption PIEC	W	2x1200
Connected load socket	W	
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Protection class		I
Protection category		IPX4
RFI suppression		EN 55014-1
Width	mm	615
Depth	mm	690
Hight	mm	990
Weight	kg	45
Tank volume	l	50
Air volume flow (max)	l/min	2x3600
Static wate lift (max)	mBar	230
Sound pressure level at 1m, EN 60704-1		
Noise level in working distance	dB(A)	67

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Construction.

C

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Suction turbines.

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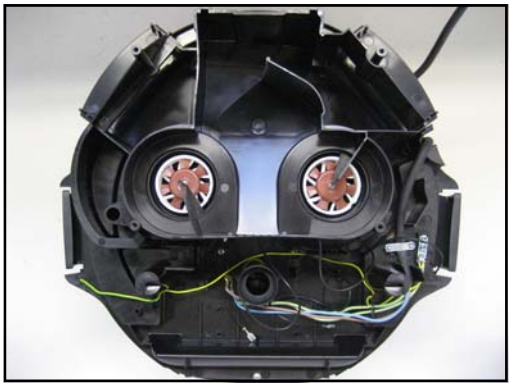
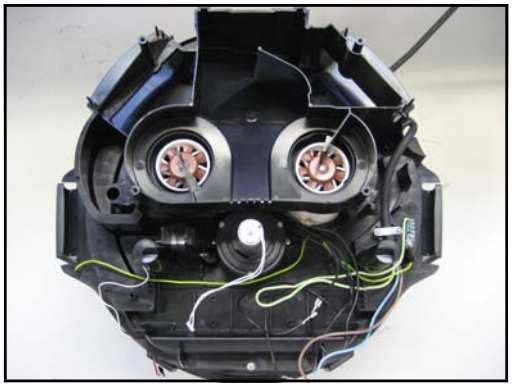
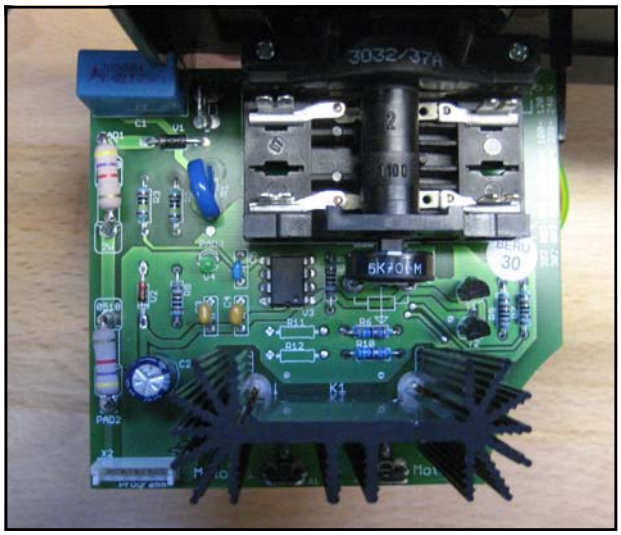


Attix 965-21 SD

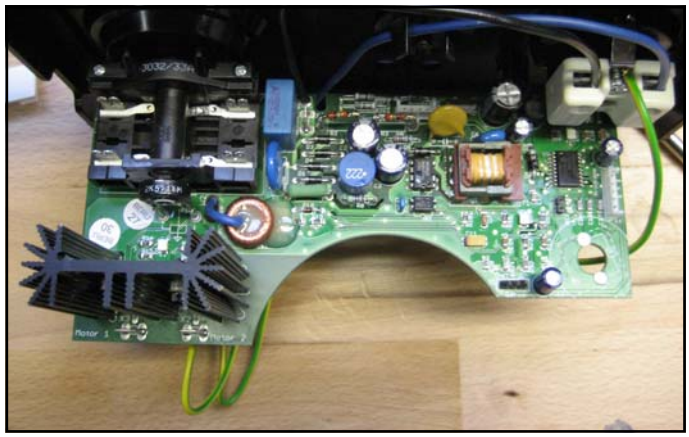


Electrical components.

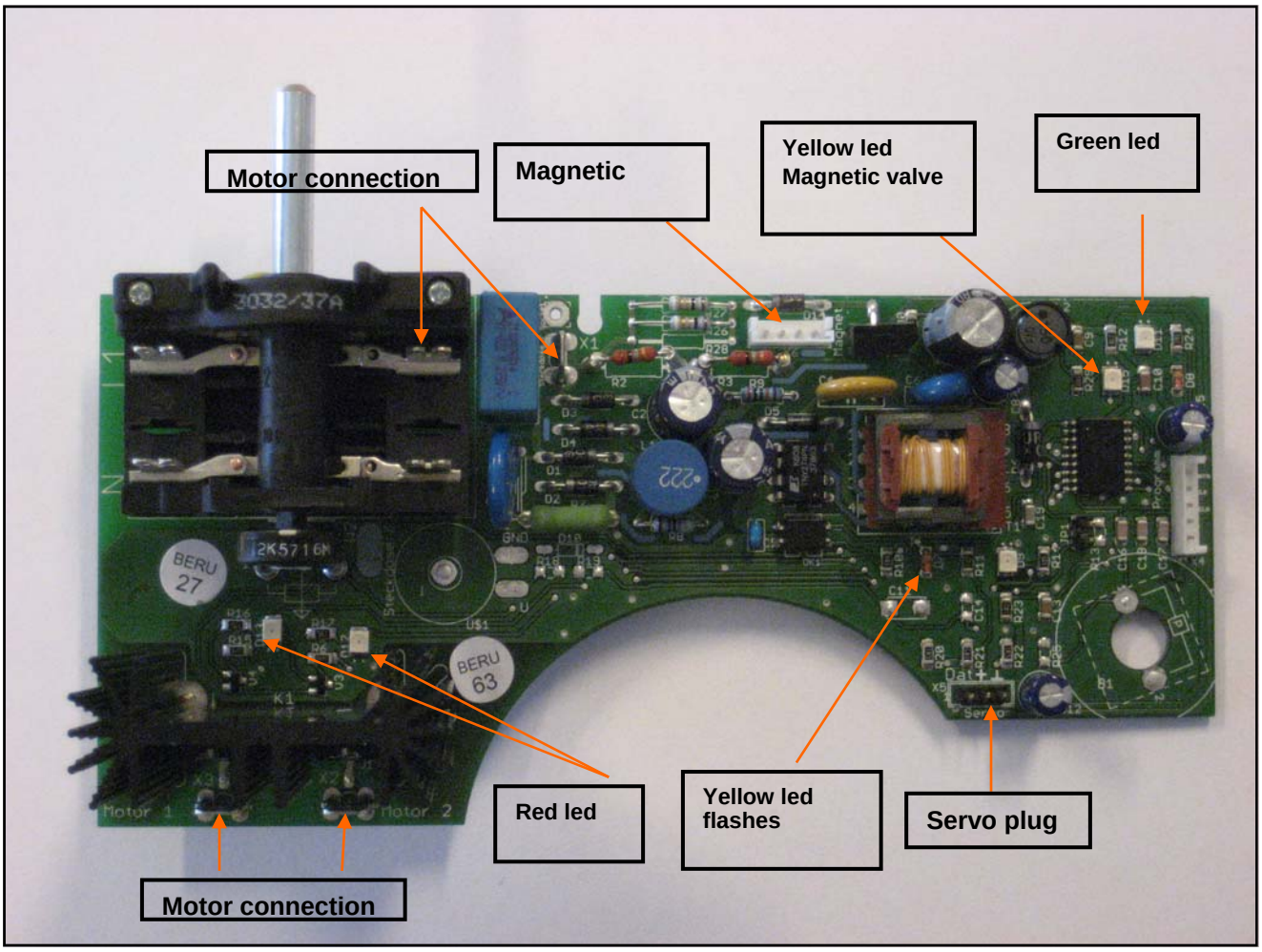
Attix 961-01

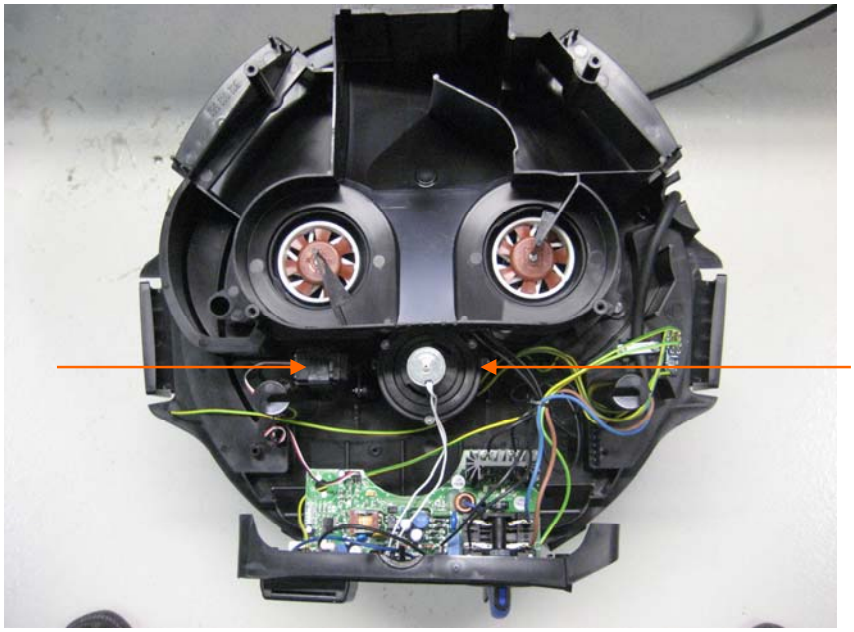


Attix 965-21 SD



Attix 965-21 SD



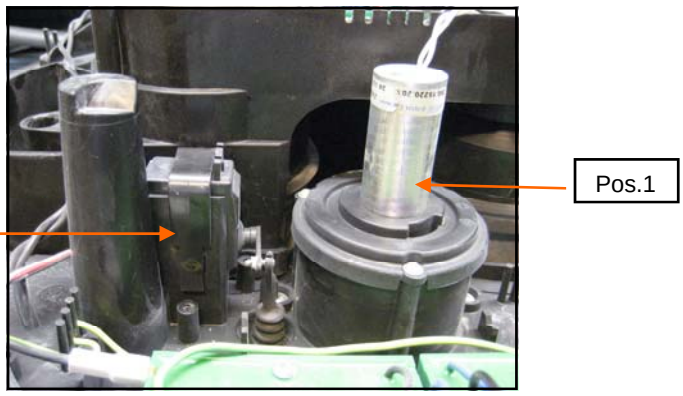


Aut. Cleaning function.

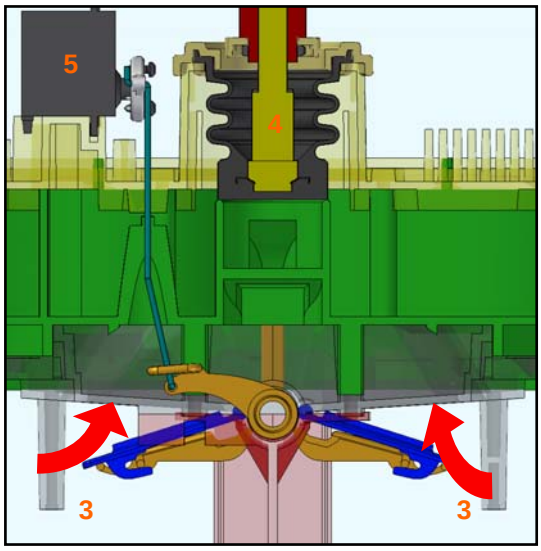
Even with extremely fine dust the automatic filter cleaning function allows you to work constantly with the same suction performance without having to manually clean the filter.

To make it possible to clean the filter during cleaning work, the filter has been divided into two halves by means of two side seals on the filter holder. The cleaner sucks in dirt through one side while the other side is being cleaned by a blast of air from the inside to the outside.

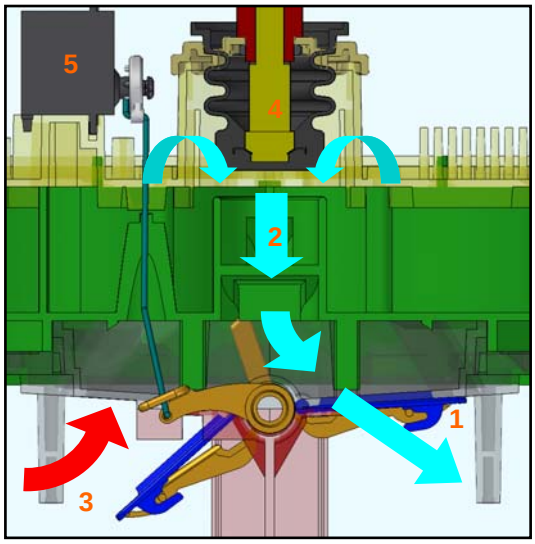
One solenoid valve (pos 1.) and the the servo motor (pos.2) control (every 30 sec.) the suction air stream and the blast of air to clean the filter.



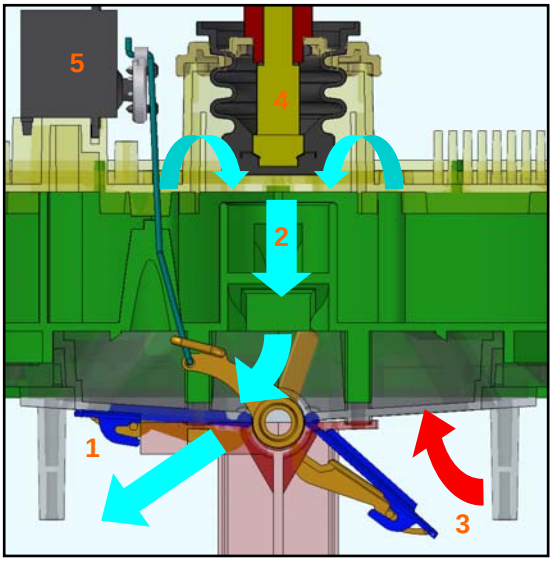
Automatic filter cleaning.



3. Sucking on both sides of the filterspliting.
4. Electromagnet valve piston is closed.
5. Servo motor is in neutral.

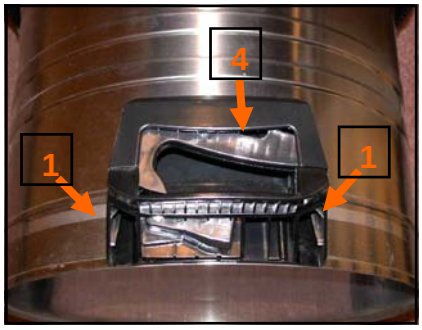


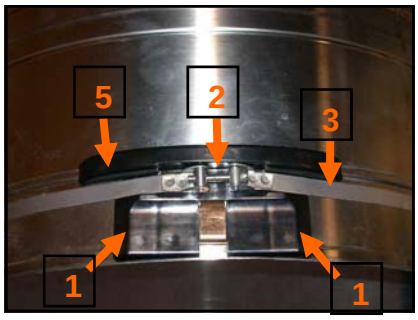
1. Right side will be closed.
3. Sucking on the left side of the filter.
2. Air push is claning the right side of the filter.
4. Electromagnet is opening to push hole.
5. Servo motor is closing the right side.

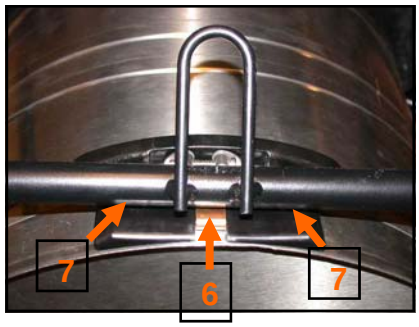


1. Left side will be closed.
3. Sucking on the right side of the filter.
2. Air push is claning the leftside of the filter.
4. Electromagnet is opening to push hole.
5. Servo motor is closing the left side.

Removing/fitting grip with tensioning band







1. Take the cleaner head with the adapter ring off the container, and lift the container out of the base frame.

2. Mark (1) the position of the grip (4) and the facing stop (5) on the container.

3. Undo the screw (2) on the tensioning band (3) with a screwdriver, and remove the grip (4) and tensioning band (3).

4. Fit in the reverse order, placing the grip (4) and stop (5) between the markings and lightly tightening the screw (2) on the tensioning band (3).

5. Set the container in the base frame, and lock it in place.

6. Align the grip (4) and stop (5) on the container in the base frame (7), and firmly tighten the screw (2) on the tensioning band (3)

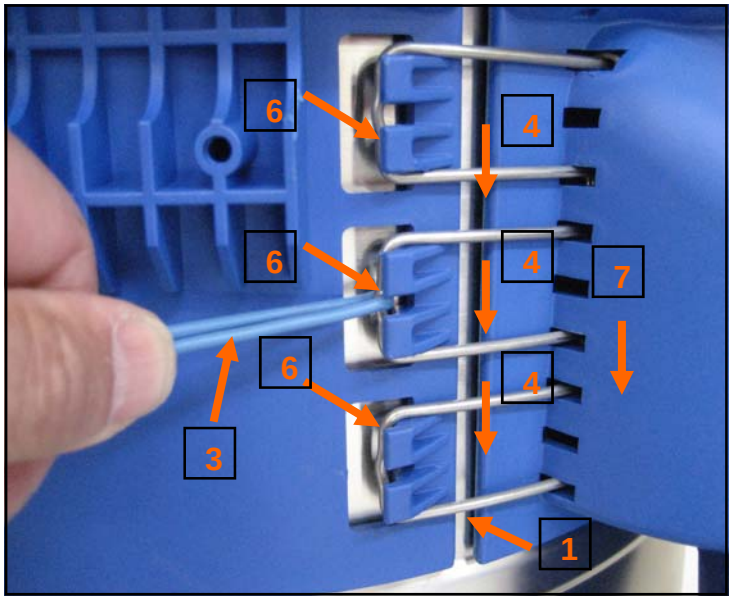
Note:
The contact faces of the contact spring (6) must be clean and free of corrosion.

Removing/fitting belt (all models)

1. Take the cleaner head with the adapter ring off the container, and lift the container out of the base frame.

2. Mark the position of the belt on the container (1).

3. Remove the ring (8) on the coupling Take out the coupling.



4. Thread a normal length of cord (3) or the like (60-80 cm) through one of the Loops (4) of the tensioning device, and pull the loop (4) back over the catch (6). Detach the second loop (4) in the same way, and take off the belt (7).

5. Fit in the reverse order, making sure the belt (7) is correctly positioned.

Removing/fitting grip
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Fig.

Remove 4 screws. in top.

Fig.

Remove 2 screws in the handle.

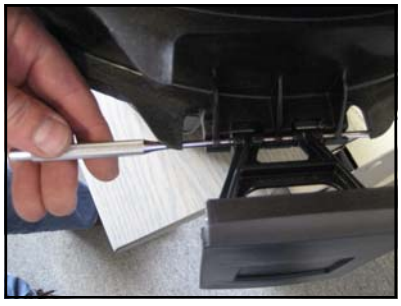
Fig. 3

Remove the filter.

Fig. 4

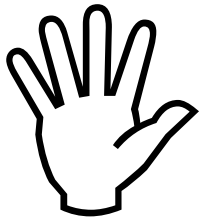
Release by pulling.

Fig. 5



Punch out the wire nail with a mandrel.

ESD (electrostatic discharge)

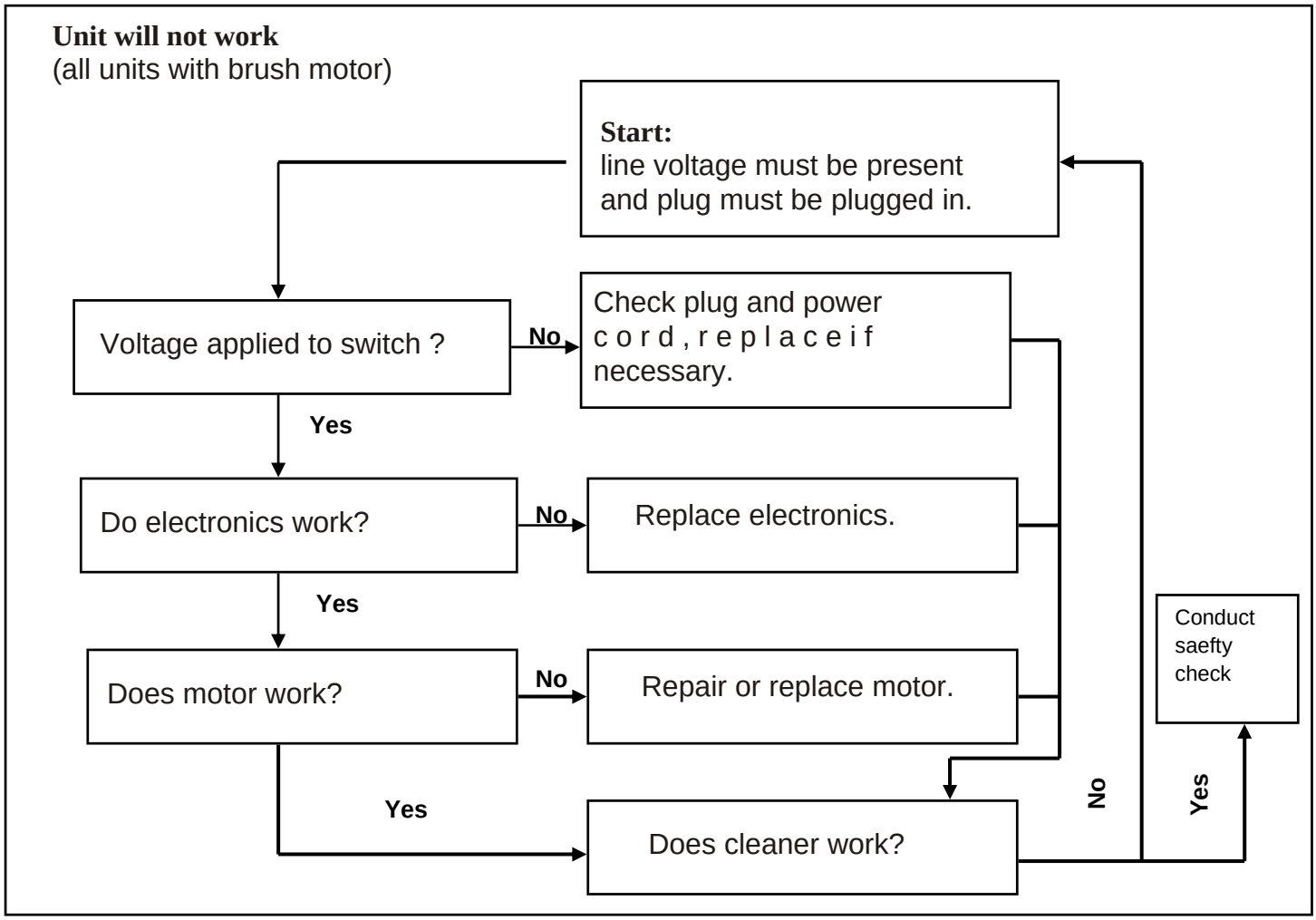


Observe the following ESD precautions before any repairs to electronic circuitry:

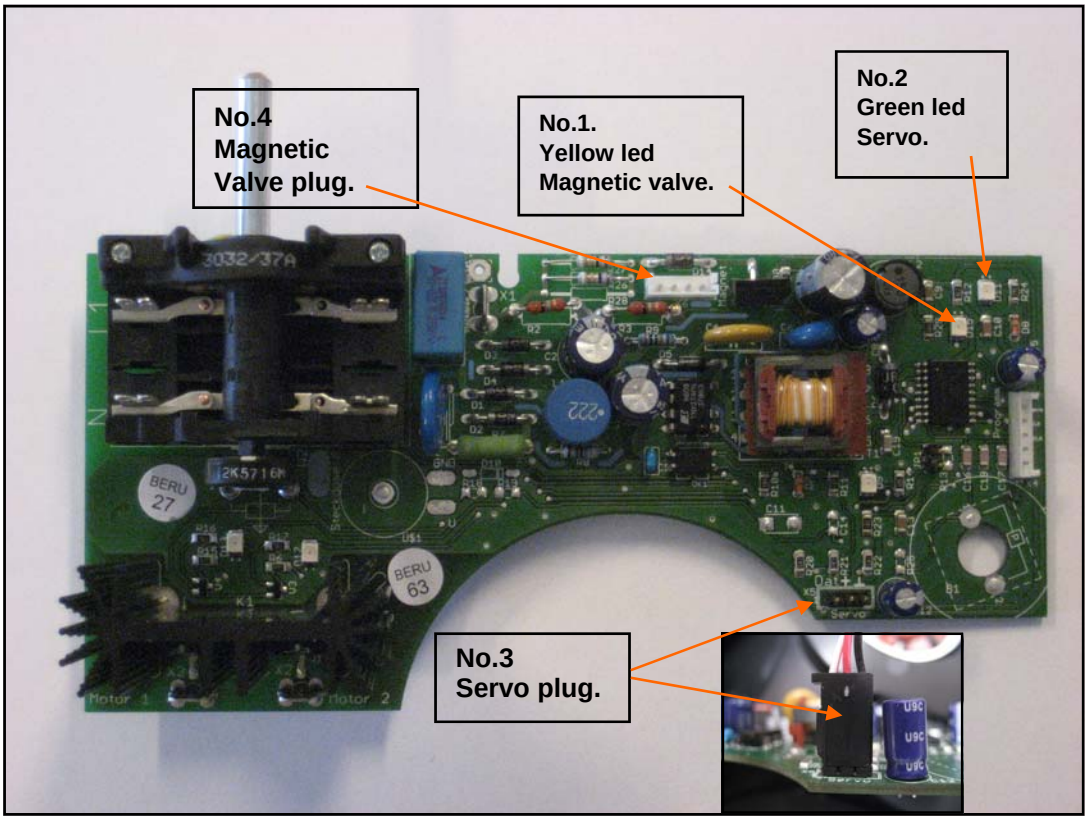
- Touch the protective coductor to discharge static from your own body.
- Possibly wear an antistatic wrist strap.
- Use a conductive floor tabletop.
- Never touch a circuit board or electronic components, always hold them by the plastic or insulation.
- Transport electronic parts in conductive packaging (e.g. Special ESD packages).

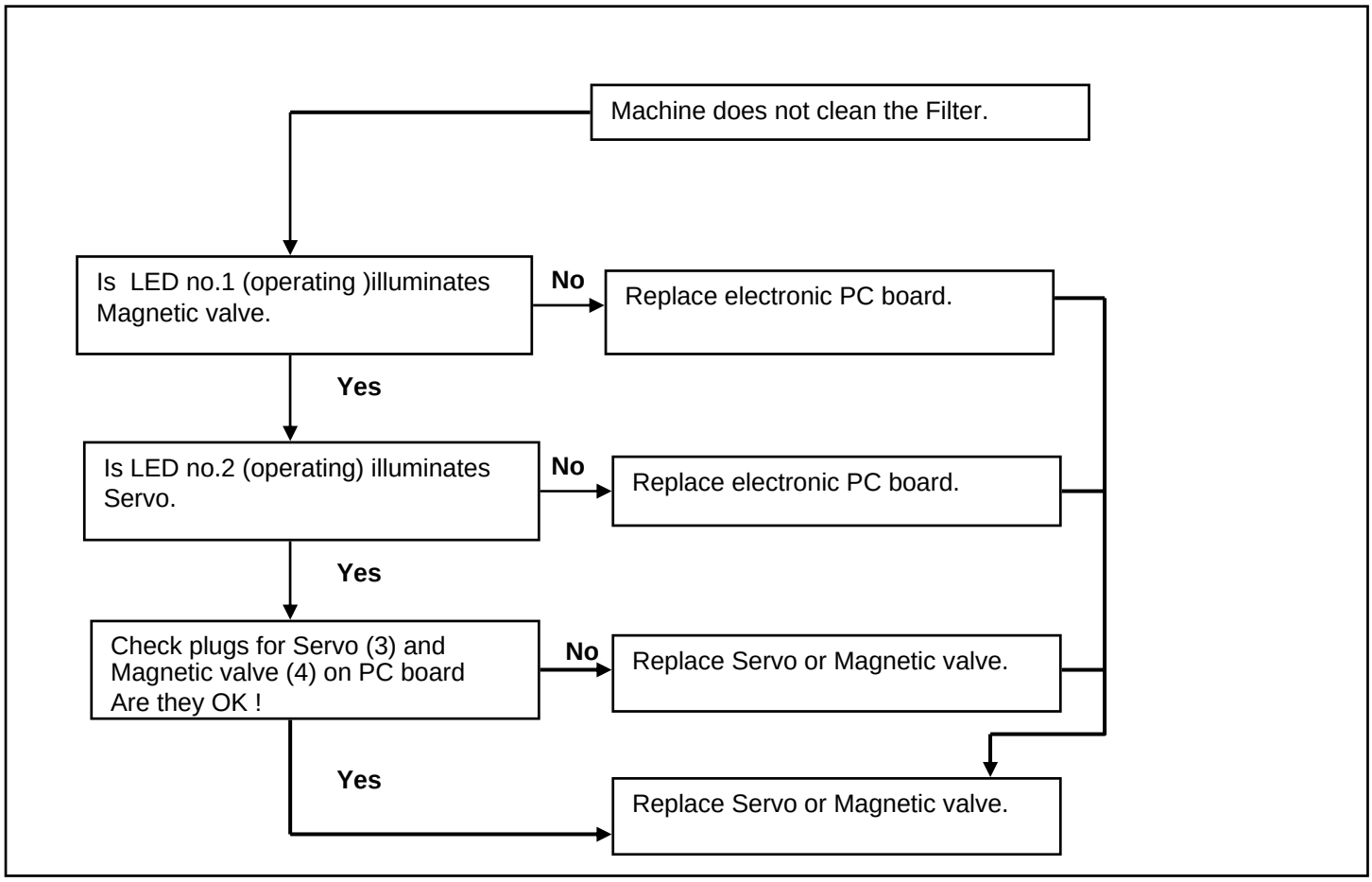
Troubleshooting on unit

Unit will not work
(all units with brush motor)



Aut. Filter cleaning




Machine does not clean the Filter.
Is LED no.1 (operating)illuminates Magnetic valve.
No
Replace electronic PC board.
Yes
Is LED no.2 (operating) illuminates Servo.
No
Replace electronic PC board.
Yes
Check plugs for Servo (3) and Magnetic valve (4) on PC board Are they OK !
No
Replace Servo or Magnetic valve.
Yes
Replace Servo or Magnetic valve.

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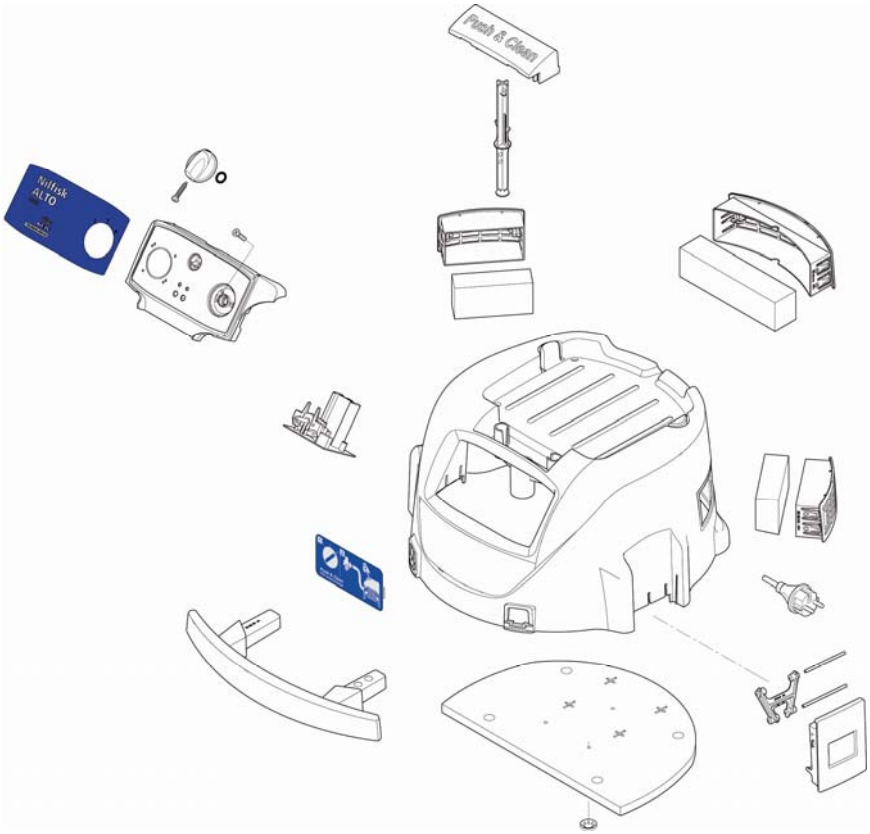

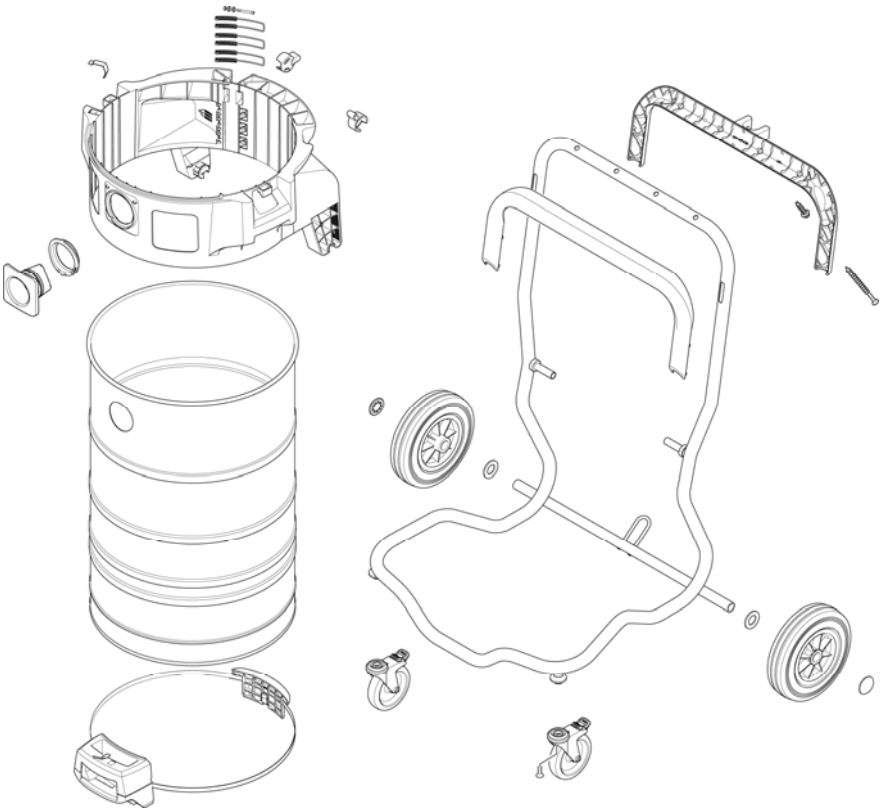

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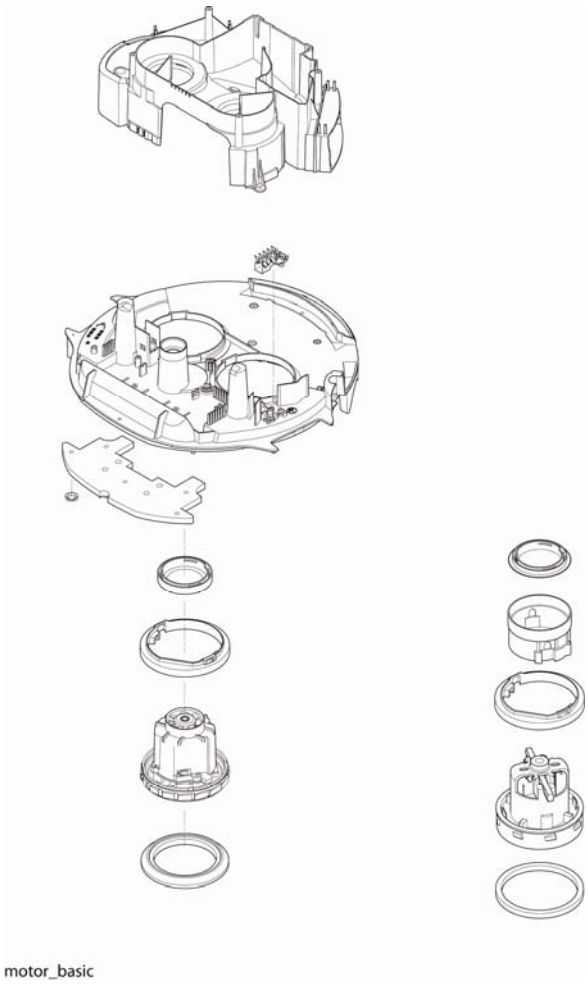

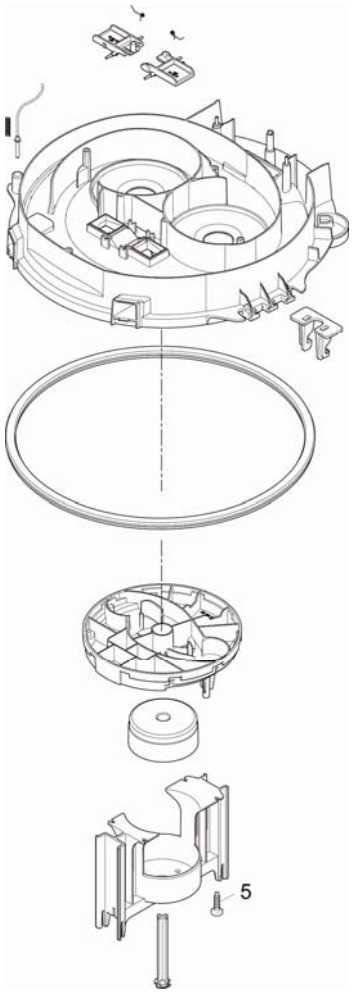

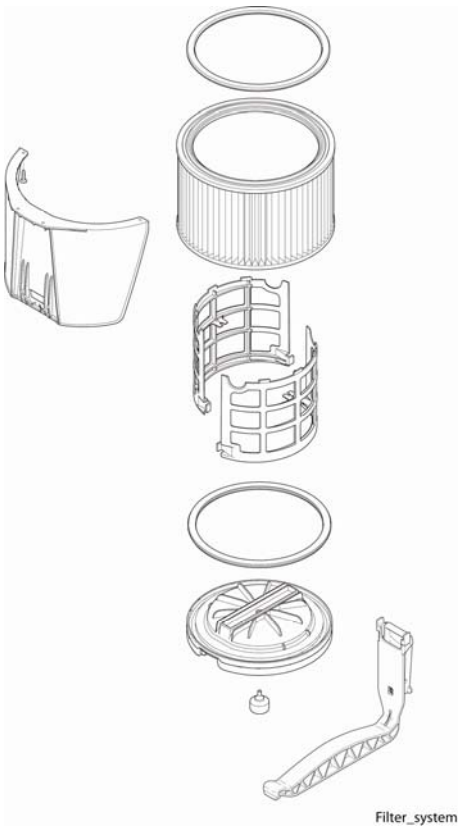

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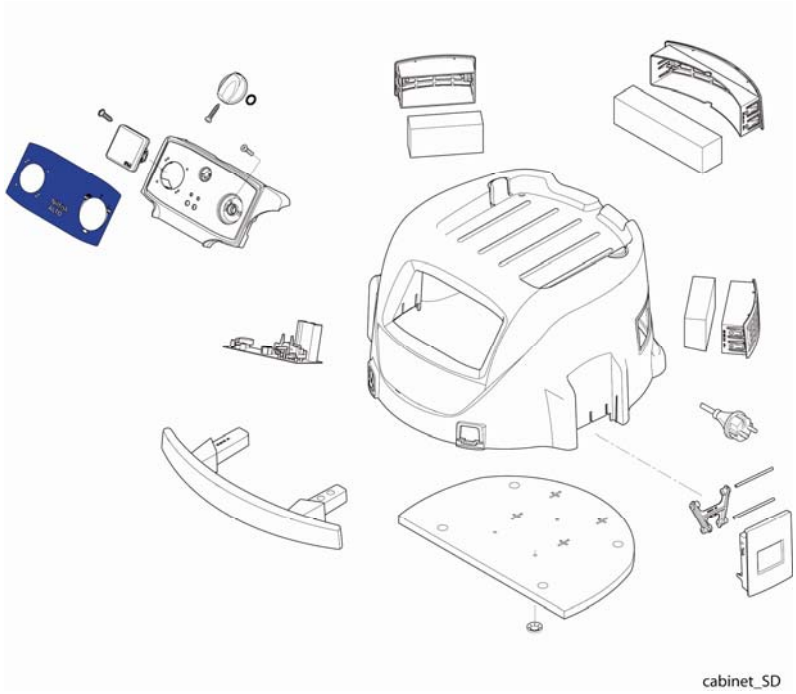

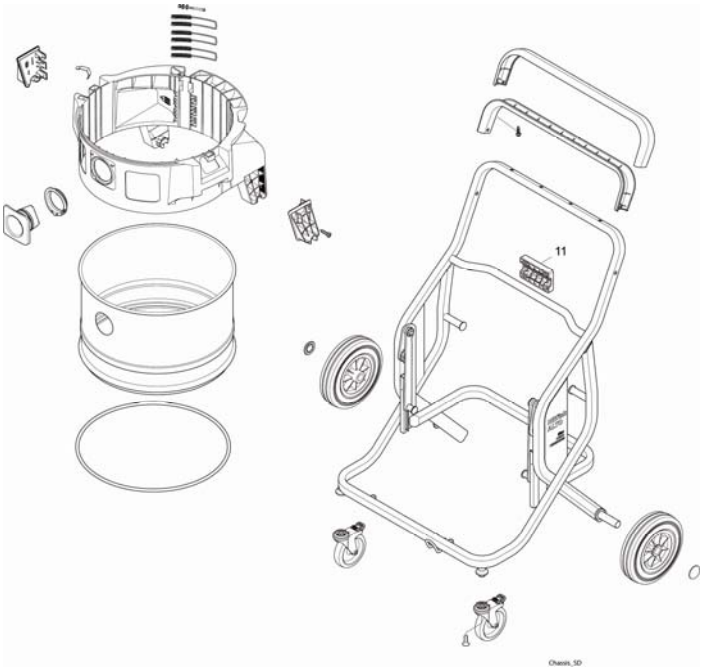

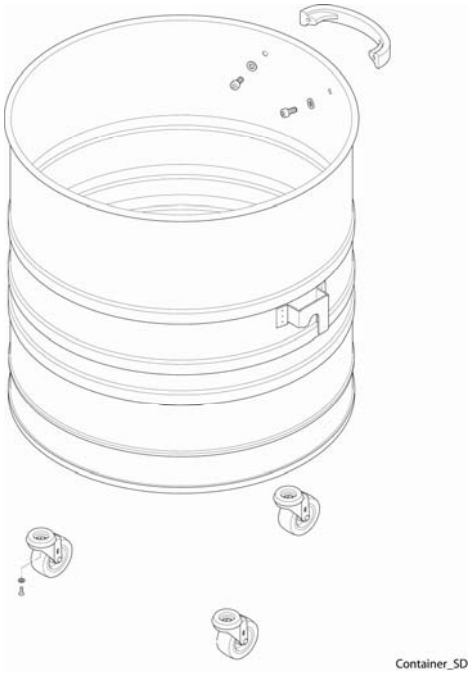

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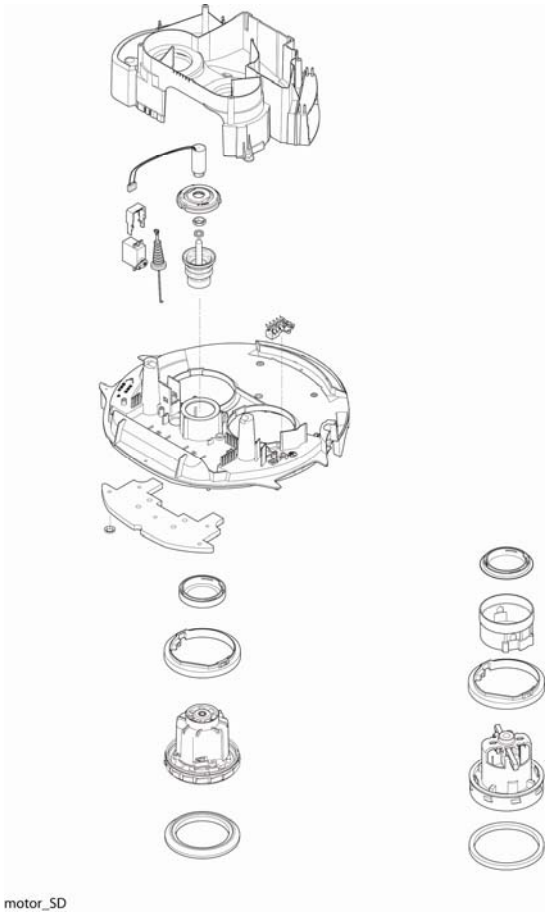
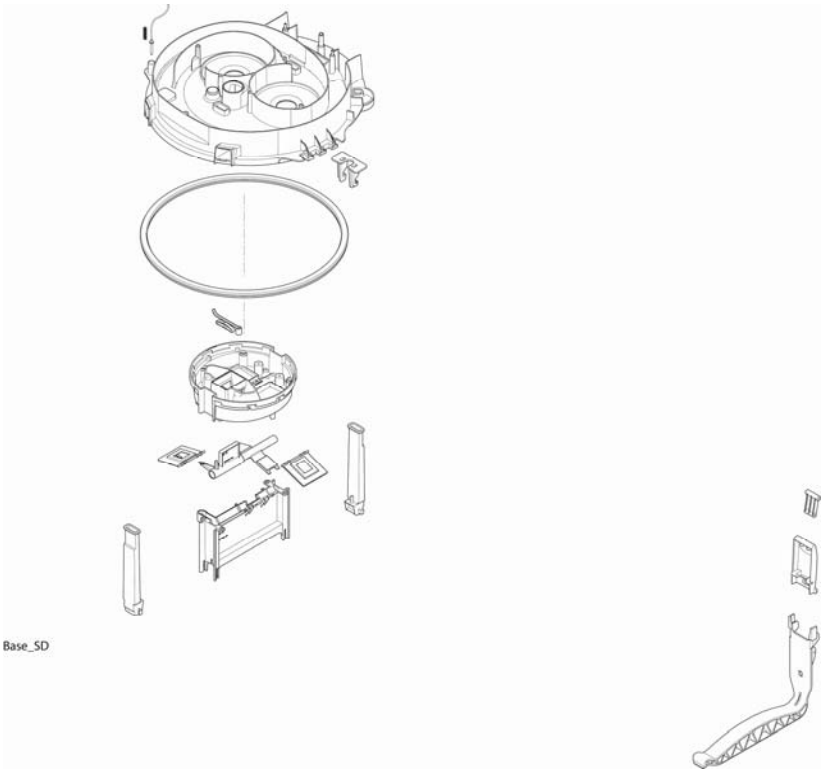
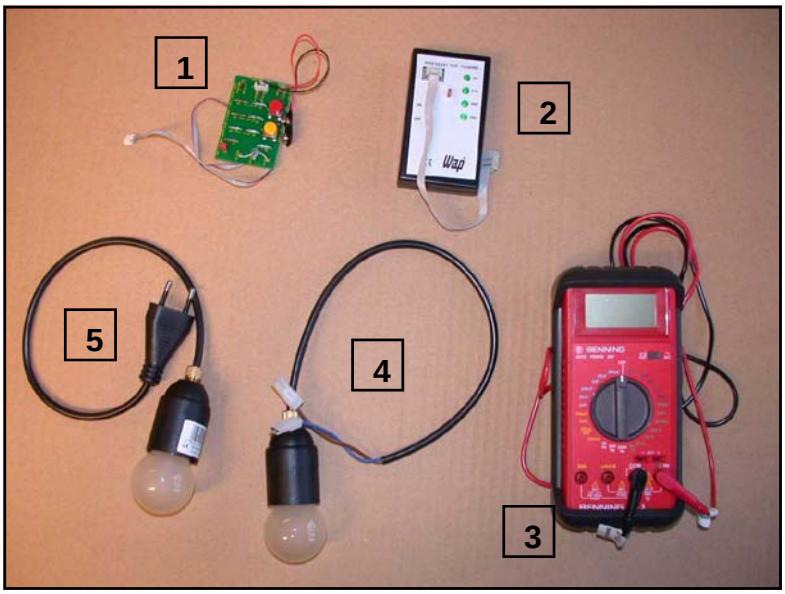
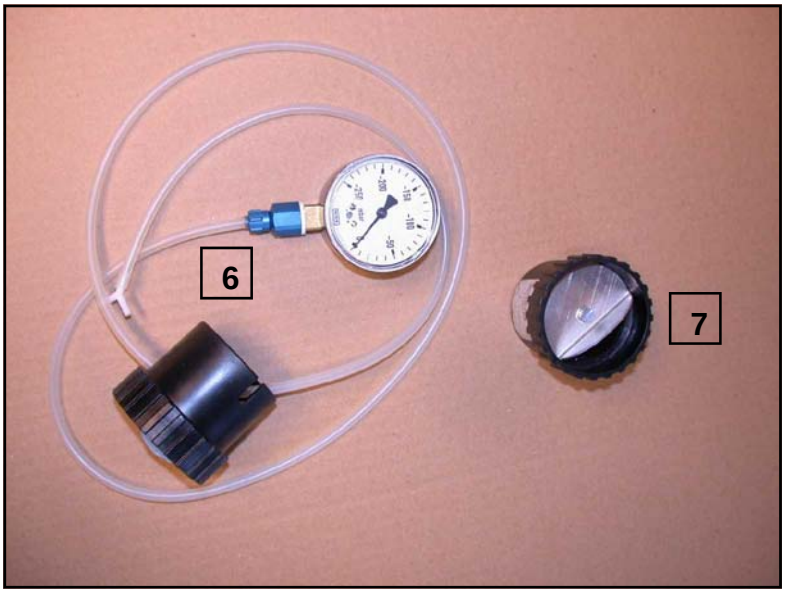




Tools



1. Calibration sensor (Alto no. 302000766)
2. Electronic device to check EC turbine
(Alto no. 62859)
3. Digital multimeter
4. Lamp holder E-27/60 W (Alto no. 302000764)
5. Lamp holder E-27/60 W (Alto no. 302000765)
6. Test device (Alto no. 40434)
7. Adjustment mask (Alto no. 62480)



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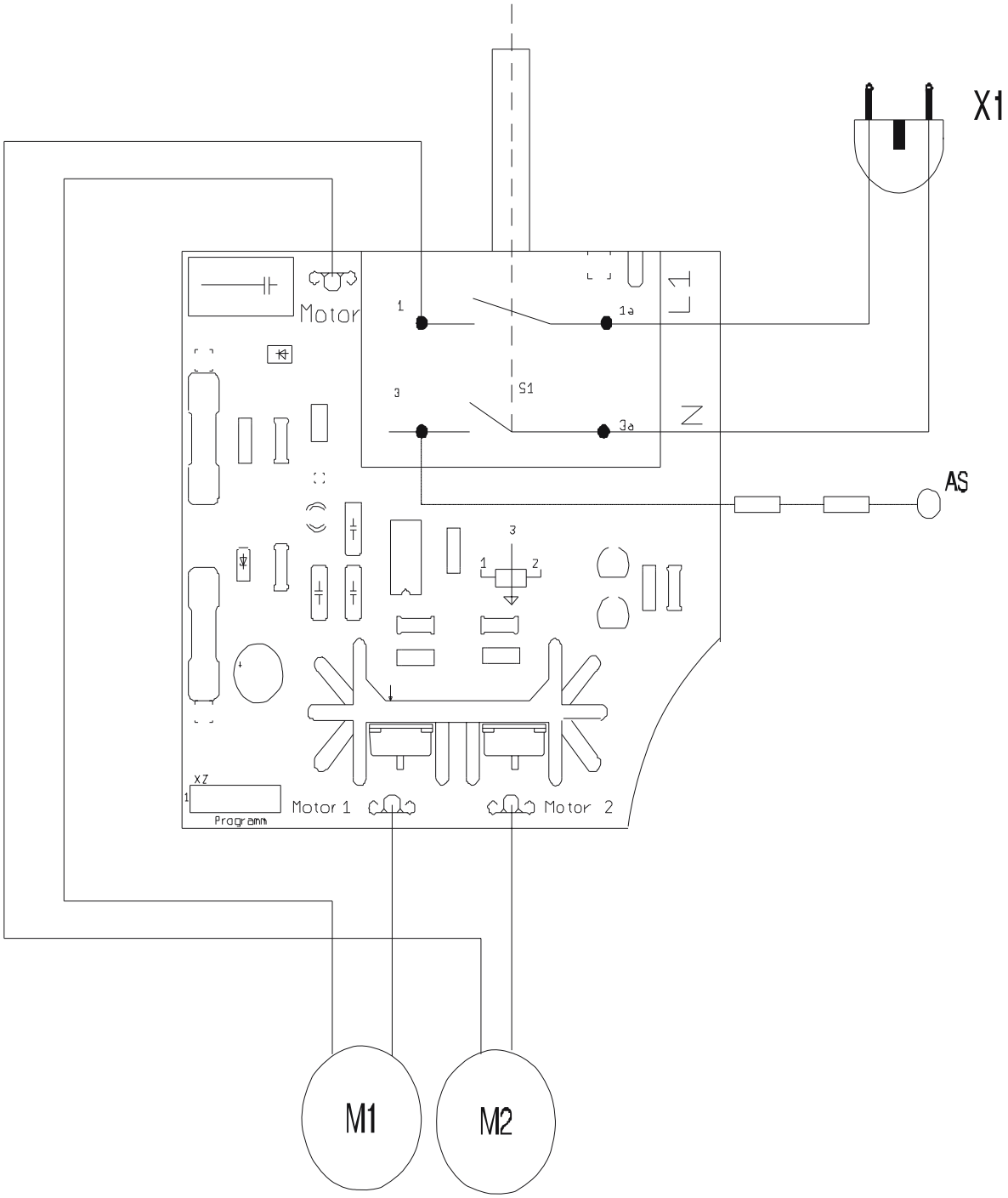
Wiring Diagram

H

ATTIX 961-01



Nilfisk ALTO

Wiring Diagram

H

ATTIX 965-21 SD XC